

Be Vigilant When Adopting Web Services Standards

The evolution of specifications and standards is often complex and confusing. More than half of the current Web services protocols will be consolidated within the next three years.

Standards, specifications, and shared custom and standard practices are the key elements of Web services. A radical element that has elevated and underpinned the growth and power of Web services is the relevance and strength of standards. Each successive, broadly deployed specification or full standard draws stability from the previous versions.

An IT organization's acceptance of standards typically depends on answers to:

- Who is using a given standard ("everybody," "everybody I know," "my biggest customer")?
- What tasks do the standards solve?

Some IT organizations also consider whether adopting a standard will give their companies products momentary or prolonged differentiation or superiority. Many enterprise architects follow the understandable model of waiting to use a standard until (practically) everyone else is using it, which inauspiciously leads to fewer standards but to better marketed and vendor-endorsed ones.

Some will also consider the necessity of a task the standard seeks to solve, such as interoperability, secure communication among trusted partners or transaction integrity. A useful standard may be adopted when there is not yet a critical mass of users but because IT life is unimaginable without it. No specification is inevitably successful or unassailable. However, you can draw some conclusions about which Web services standards are most important and have the broadest application. The unfortunate reality is that flawed processes in standards development lead to political bickering among competing or even allied vendors, and superiority in a proposed standard is no guarantee of its success. You can use this intelligence to select long-term practices or to synchronize adoption of standards with Gartner's predictions.

SOAP/WSDL

Foundational standards for Web services, such as Web Services Description Language (WSDL) and Simple Object Access Protocol (SOAP), are used extensively, and the use will continue to grow. More than 90 percent of new projects in Global 2000 companies will employ SOAP and WSDL in 2010 (0.8 probability). WSDL, often ignored as a foundational standard, is emerging to parallel SOAP in importance for a well-developed service-oriented architecture (see "Consider WSDL a Critical Standard").

The inevitable interoperability snarls expected when Web services are used to cross technology-provider vendor platforms are easing and seem likely to be untangled further. The adoption of implementation

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profiles promulgated through the Web Services Interoperability Organization (WS-I) is a useful means to mitigate these tangles (see “Use the WS-I Basic Profile to Reconcile Web Services”). This represents a significant mitigation of the concern we expressed two years ago (see “The Web Services Fragmentation Wars Begin”).

UDDI

IT organizations have been less interested in Universal Description, Discovery and Integration (UDDI), the third foundational standard in Web services, than in SOAP or WSDL. Initial messaging around UDDI was confusing; many enterprise architects interpreted it to mean that UDDI was not only a standard but also a directory external to enterprises. UDDI is a means to create and define directories, and thus provides significant value to IT organizations that seek to catalyze reuse. However, IT organizations must make services discoverable at design time, regardless of how many directories are generated. Building the sprawl of service-oriented architecture effectively demands such a capability.

By YE07, 20 percent of new projects in Global 2000 companies will employ UDDI (0.7 probability). The alternative is obscurity or proprietary means of ordering service repositories, which will enable discrete development teams and departments to find what they need but will inhibit them from sharing information.

The foundational standards have been valuable so far, but their shortcomings irritate enterprise development staffs. Standards advocates now carefully limit each standard so that the review can go faster compared to having a more-extensive standard. The result is an iterative process in which stable standards underlie subsequent standards, reducing risk.

WS-Security

To ensure security, IT organizations will likely accelerate acceptance of WS-Security. Adoption is approximately 5 percent. By YE07, 35 percent of new projects in Global 2000 companies will use WS-Security (0.8 probability). We expect the proportion to increase steadily after that date (see “A Decision Model for Web Services Security Deployment”). By YE10, 65 percent of new projects in Global 2000 companies will use WS-Security (0.8 probability). Gartner recommends that IT organizations start using the standard for external projects.

WS-Reliability/WS-Reliable Messaging

Similar to their expectations for secure interchange, enterprises need predictable, reliable interchange. This need is the primary impetus for relying on a standardized means of accomplishing such capabilities in Web services. The Web Services Reliability (WS-Reliability) specification and Web Services Reliable Messaging (WSRM) are parallel proposals for managing this necessary facet of Web services delivery.

WS-Reliability and WSRM will coalesce in one defining, reliable messaging specification by YE06 (0.6 probability). By YE07, 10 percent of new projects in Global 2000 companies will use a reliable messaging standard in conjunction with Web services (0.6 probability). By YE10, 45 percent of new projects in Global 2000 companies will use a reliable messaging standard in conjunction with Web services (0.7 probability).

WS-Addressing

Developers will benefit substantially from more-robust support for a wider variety of protocols for Web services than the commonly employed HTTP. Recent developments for WS-Addressing give Web

services a higher and better-defined profile (see “Vendors’ Choice of W3C Raises WS-Addressing’s Profile”). WS-Addressing defines Extensible Markup Language (XML) elements to identify Web services endpoints and secure end-to-end endpoint identification in messages. It will enable messaging systems to support message transmission through network components that may include processing nodes such as firewalls, gateways and endpoint managers. We expect adoption of WS-Addressing to be initially modest but ultimately quite steep to exploit this longer list of protocols. By YE07, 15 percent of new projects in Global 2000 companies will use WS-Addressing (0.7 probability). The adoption rate will accelerate as it gains acceptance and there are the “network effect” multiplies among enterprises that would benefit from it. By YE10, 65 percent of new projects in Global 2000 companies will use WS-Addressing (0.6 probability).

Larger View

Having too many standards can be as risky as having too few, due to version proliferation and other interoperability challenges. Additionally, the likely futures of related but separate standards families, such as ebXML, add confusion to the market (see “ebXML’s Future Appears Brightest in Messaging”). The major vendors recognize this flaw. The number of proposed standards must shrink to avoid an interdependency catastrophe if a version stalls. More than 50 percent of Web services protocol efforts under development or proposed through YE04 will have been consolidated with other efforts by YE07 (0.8 probability). Ultimately, Web services will continue to be used effectively.